

Figure 1 illustrates the steps of the proposed algorithm for finding a minimum spanning tree. The process starts with a graph with 10 nodes and 15 edges. The algorithm proceeds by selecting edges in increasing order of weight, rejecting those that would either create a cycle or result in a vertex with a degree greater than 2. The steps are as follows:

- (a) Initial graph with 10 nodes and 15 edges.
- (b) Select edge (1,2) with weight 1.
- (c) Select edge (2,3) with weight 1.
- (d) Select edge (3,4) with weight 1.
- (e) Select edge (4,5) with weight 1.
- (f) Select edge (5,6) with weight 1.
- (g) Select edge (6,7) with weight 1.
- (h) Select edge (7,8) with weight 1.
- (i) Select edge (8,9) with weight 1.
- (j) Select edge (9,10) with weight 1.
- (k) Select edge (1,3) with weight 2.
- (l) Final minimum spanning tree with 9 edges and total weight 9.

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